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Name.....

Reg. No.....

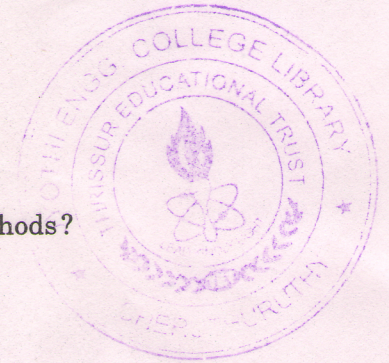
**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2010**

AI 04 805 (B) – INSTRUMENTATION SYSTEM DESIGN

Time : Three Hours

Maximum : 100 Marks

Answer all questions.



- I. (a) Explain the term loading effect in connection with transducers.
(b) Draw the circuit of a voltage follower and discuss its operation.
(c) How valves are selected as per ASTM standards?
(d) What do you mean by cabling? What are the preparations and methods?
(e) Explain the concept of project flow.
(f) Describe the characteristics of analytical instruments.
(g) Explain the concepts and need for cost control.
(h) Write a note on control room lighting.
- (8 × 5 = 40 marks)
- II. (a) Draw typical circuits for F to V and V to F converters and explain the operation with relevant system equations. Discuss their roles in instrumentation systems.
- Or*
- (b) Draw the circuit of an instrumentation amplifier and derive the expression for gain. Mention the advantages of instrumentation amplifier.
- III. (a) Which are the various cable types? Give an account of extension cables for thermocouples.
- Or*
- (b) How control valve sizing is calculated? Explain how calculation is done for liquid, steam and gas.
- IV. (a) Write a note on electrical safety. Enlighten the importance and the various safety measures in detail.
- Or*
- (b) Write a note on work co-ordination. Enumerate the roles of project manager, project engineer and equipment engineer.
- V. (a) Discuss the roles of purchase department and discuss the various procedures they adopt for their assignments to meet their goals.
- Or*
- (b) Explain checkout procedure and its relevance. Discuss control valve checkout as an example.
- (4 × 15 = 60 marks)